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ABSTRACT

This study examines what really makes a difference in improving student learning. Teachers are constantly bombarded with ideas about how to do their work more effectively and efficiently. They must be encouraged to be knowledgeable about recent research in teaching and learning and committed to making solid research findings based on classroom practice. A literature search yields three domains which directly impact learning effectiveness: (1) learning environment; (2) teaching methodologies and student experiences; and (3) assessment and evaluation. The classroom environment has both cognitive and affective elements. Parental involvement and provision of a safe, challenging environment are particularly influential factors in the learning environment. Prevalent factors in teaching methodologies and student experiences include cooperative learning, technology, brain-based instruction, and curriculum structure. The factors and practices of the assessment and evaluation domain which surface as predictors of student success and improved learning are predetermined through learning targets, authentic assessment, questioning, and various assessment strategies. (Contains 45 references.) (SM)

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Becoming Consumers Of Our Own Research: What Really Makes A Difference In Improving Learning?

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Becoming Consumers Of Our Own Research:
What Really Makes A Difference In Improving Learning?

Statement of the Problem: The problem of this study is to determine what really makes a difference in improving learning. Teachers are constantly bombarded with ideas about how to do their work more effectively and more efficiently. Everyone has an opinion, and because most teachers want to do the best job they can possibly do in helping students learn, educators are susceptible to the overload of advice offered by no small army of well-intentioned mentors. If we as teachers are going to make our way through this minefield, we need to listen to each other and we need to become consumers of our own research. We must ask ourselves what we are doing that really makes a difference in improving learning. The further problem of this study is to determine ways in which teachers can be encouraged to be knowledgeable of recent research in teaching and learning and committed to making solid research findings the basis of classroom practice.

Literature Review: The literature search yielded three domains which appear to directly impact learning effectiveness. For the purpose of review and future discussion, these domains shall be labeled learning environment, teaching methodologies and student experiences, and assessment and evaluation.

Learning Environment. Gordon and Williams-Browne (1996) define the learning environment as "the sum total of the physical and human qualities that combine to create a space in which children and adults work and play together. Environment is the content teachers arrange; it is an atmosphere they create; it is a feeling they communicate" (pp. 252-253). As this definition indicates, the classroom environment has both cognitive and affective elements. In examining the improvement of learning, parental involvement and provision of a safe and challenging environment are particularly influential factors in the learning environment.

It comes as no surprise to classroom teachers that parents' involvement in their children's education increases student performance (Kines, 1997). "Families that expect their children to succeed in school usually are not disappointed" (Solo, 1997, p.30). A home environment which is child-friendly and school-friendly enhances the child's self-esteem as well as their learning (Galen, 1991). This sense of partnership between the school and the home is crucial for maximizing student learning potential (Moore, 1991). Does hard research verify the experience of classroom teachers in connecting improvement of student learning to the level of parental involvement? The National State Boards of Education, in reviewing research on the impact of parental involvement, reached the conclusion that a high level of parental involvement was essential if significant gains in student performance are to be achieved (Galen, 1991). A recent study by Griffith (1996) looked at the correlation of several school characteristics with student achievement. He found a positive relationship between parental involvement and student test performance. Parental involvement showed an even stronger correlation to student achievement than characteristics such as class size, school size, and teacher-student ratio.

Schools which have a significant impact on the lives of their students make a safe environment one of their top priorities (Libler, 1992). Modern brain research has given us specific insights into why it is so crucial that students have a safe and challenging learning environment. Students who encounter a threatening situation tend to "downshift" their thinking (Pool, 1997). This kind of reaction can be the result of environmental factors such as abuse, violence, severe poverty, and malnourishment. Threats do not have to be of this magnitude to impact student performance. The very structure of the traditional educational setting in which the teacher decides what will be learned, how it will be learned, when it will be learned, and how students' performance will be evaluated , can provide enough emotional threat to affect students' ability to perform higher-order thinking tasks (Pool, 1997). Determination of what constitutes a safe and challenging environment centers around the issues of student choice, attention to individual differences, cooperation, and respect (Mills, 1997; Palardy, 1997; Queen & Gaskey, 1997; Booth, 1997; Sternberg, 1997; DeBruyn, 1997).

Teaching Methodologies and Student Experiences. A second category of factors emerges which deals with teaching behaviors and the types of experiences students have in the classroom which improve learning. Within this domain, prevalent factors are cooperative learning, technology, brain-based instruction, and curricular structure.

Research has shown that students who work together master material better than those who work alone. With accountability and rewards for individual learning and group mastery, equal opportunity for group success is stressed (Slavin, 1991; Whicker, Bol, & Nunnery, 1997). In 41 out of 67 studies examined, greater student achievement occurred in cooperative learning classes than in control classes (Slavin, 1991). Research into the effects of mixed ability grouping (Watson & Marshall, 1995) and peer tutoring (King-Sears, 1995) are consistent with these findings.

The need for well-trained teachers and technologically-equipped classrooms is essential for preparing students to enter a high-tech job market (Hannafin & Land, 1997). It is estimated that by the year 2000, two million students will be on-line in America's classrooms (Dyrli & Kinnamon, 1995). This access will provide resources and current data which are not available in textbooks. Research on the effects of technology in the classroom appears promising. Due to the decision-making skills required, students engage in higher order thinking skills and demonstrate self-initiated learning (Hancock, 1997). Numerous studies reveal that the use of technology yields higher interest levels, more time on-task, better grades and raised teacher interest (Butzin, 1992; Hodges, 1997; Traubitz, 1998).

Within the past quarter of a century, research into cognition, how the brain receives and interprets stimuli, has played a significant role in understanding and designing effective instruction. Theories derived from brain research, learning styles, and cognitive instruction have been used to create experiences which promote student success. With this insight, teachers are able to implement instruction based upon how students learn most effectively. Learning styles theory is concerned with how students think and feel as they learn (Silver, Strong, & Perini, 1997). As student diversity continues to increase, it is imperative that teachers identify and understand their students' background and learning preferences and accommodate these in designing optimal learning experiences (Allen-Sommerville, 1996). The theory of multiple intelligences (MI) focuses on the process of learning and places the responsibility for helping students discover their talents and strengths with the teacher and school (Campbell, 1997). Cognitive instruction, also referred to as teaching thinking skills, appears prominently in the research on effective instruction. Four strategies which surfaced through this literature review were questioning (Latham, 1997), inquiry (Sutman, 1995; Wise, 1996), reciprocal teaching (Westera & Moore, 1995), and the use of advance organizers (Kiewra et al., 1997).

The review conducted in this study revealed several variables which teachers, the primary curriculum planners, should accommodate in order to maximize the effects of instruction. First, learning experiences should be systematic. Regardless of whether the activity is student-centered or activity-centered, systematic instruction was associated with improved student performance (Ediger, 1995). Second, curriculum should be concept-based and thematic, not focused on isolated skills. Flexibility should be included in the lesson plan to allow students to ask questions and seek answers to those questions (Lolli, 1996). Studies show that thematic instruction appears to raise student achievement as students sift and evaluate the most important concepts, retaining information that is useful and relevant (White, 1995). Third, learning experiences must be active, not passive. One method often associated with early childhood curricula which allows for self-directed, hands-on learning experiences is the learning center. The learning center is a valuable curricular modification for any age because it provides students with opportunities to engage in hands-on learning, interact socially, and solve meaningful problems (Stone, 1996). Since reading is an integral part of any learning center, students are able to self-initiate literacy activities and thus become more responsible for their learning (Patton & Mercer, 1996; Booth, 1997).

Assessment and Evaluation. The factors and practices of the assessment and evaluation domain which surface as predictors of student success and improved learning are pre-determined learning targets, authentic assessment, questioning, and variety of assessment strategies. Gronlund (1998) stresses that quality assessment "requires a clear conception of all intended learning outcomes" (p. 18). Such outcomes or targets must not only be established but also communicated and assessed to ensure (1) that learning has taken place and (2) the degree to which knowledge, abilities and dispositions have been mastered.

To promote and improve learning success, educators must be definitive at the beginning about what students should know and be able to do at the end of instruction. The ways teachers organize, communicate, and assess learning outcomes send a forceful message to students that learning is a coherent process and that success is achievable. Teachers must provide students with well-defined criteria, examples and non-examples of products and processes, and ways to achieve excellence (McTighe, 1997).

Quality assessment involves real-world connections and experiences and consistently occurs throughout the exemplary learning process. Authentic assessment activities should challenge students and provide safety nets for mistakes and failures. Consequently, for all students to have equal opportunities for success they must be afforded assessment choices (Walker, 1997). Probabilities for success increase with variety and the opportunities to work with others. As students engage in performance-based, collaborative assessment, peers have opportunities to become instructional coaches. Students-as-coaches also increase the probability of making connections to the world of work.

Questioning is probably the most frequently utilized assessment technique. Effective questions keep students engaged, on-task, and efficiently involves students in higher-order thinking and problem-solving activities.

Students normally feel comfortable with questioning because of its consistent application in classrooms, which proves to be an advantage of this assessment technique. However, for questions to be effective, students must feel safe and free from threat if they answer incorrectly. Consequently, how teachers respond to incorrect responses is critical to the emotional safety of students and ultimately to the enhancement of learning. Quality questioning builds, promotes and communicates relationships among concepts, thereby maximizing retention and improving learning (Latham,1997).

Glazer (1993) indicates that students should be taught how to assess their own learning in order to connect growth and needs to individual performance. Using a variety of assessment strategies provides students more opportunities to examine areas of growth and strengths while encouraging metacognition and self-regulation. This reflection also encourages students to see learning as a process rather than a product (Valeri-Gold, Olson, & Deming, 1992).

Students do well when they have a voice in creating different products and corresponding criteria for mastery. As students and the teacher create dialogue about quality and opportunities to succeed, their collaboration supports the idea of assessment variety and student responsibility; values and affirms individual differences across ability, gender, and ethnic lines; and establishes guidelines for degrees of accomplishment (Wise, 1996).

Contribution and Conclusion. More than sixty years ago, Dewey (1929) criticized the lack of professional rigor in classroom decision-making and urged teachers to develop skills in observation and reflection as a means for developing a theoretical knowledge base. Sanders and McCutcheon (1986) define teaching as a decision-making process that requires skillful action. They propose that professional knowledge is essentially theoretical knowledge. The need to link professional knowledge to theoretical knowledge is stronger than ever. Educators are under scrutiny to improve instruction. It is the teachers themselves, however, who must engage in professional inquiry to define attributes of successful teaching and to break old routines and habits in response to their continually evolving classrooms. In essence, teachers must become the clinicians of past practice and consumers of their own research. Such activities will ultimately lead to a more dynamic professional knowledge base in which teachers can improve practice through well grounded research (Darling-Hammond, 1998).

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